AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application:

Listing of Claims

1. (Original) An apparatus for projecting fringes onto a surface of an object, said apparatus comprising:

   a) two sources of radiation having a spectral distribution;

   b) a collimator in optical communication with said two sources, said collimator generating two substantially collimated beams of broadband radiation;

   c) a diffractive grating in optical communication with said collimator; and

   d) a lens in optical communication with said diffractive grating, wherein said lens generates two images of radiation having a spatial distribution of spectral regions.

2. (Original) The apparatus of claim 1 wherein each of said spectral regions of one of said sources is separated from a respective spectral region of the other of said sources by a distance proportional to the respective wavelength of said spectral regions.

3. (Original) The apparatus of claim 2 wherein said distance is linearly proportional to said wavelength of said spectral regions.

4. (Original) The apparatus of claim 2 wherein said distance comprises a midpoint equidistant from each of two respective spectral regions and wherein said midpoint is fixed.

5. (Original) The apparatus of claim 1 wherein said two sources of radiation are coherent with respect to one another.

6. (Original) The apparatus of claim 1 wherein said two sources of radiation have a spectral distribution that is narrowband.

7. (Original) The apparatus of claim 1 further comprising a detector for determining three-dimensional position information of a point on said surface of said object.

8. (Original) The apparatus of claim 1 wherein the two sources of radiation are generated from a single source of radiation.

9. (Original) The apparatus of claim 1 further comprising a translator coupled to said diffractive grating, said translator shifting the relative phase of one of said spectral regions with respect to the other of said spectral regions.

Claims 10-18. (Canceled)

19. (Currently amended) A method for projecting fringes onto a surface of an object, said method comprising the steps of:

a) providing two sources of radiation separated by a distance, each of said sources having a spectral distribution and being coherent with respect to the other of said sources;

b) illuminating ~~said~~ a point on said surface of said object with said radiation from each of said sources;

c) moving one of said sources relative to the other of said sources; and

d) detecting radiation scattered by said point on said surface of said object.

20. (Original) The method of claim 19 further comprising the step of changing the phase of a spectral component in said spectral distribution from one of said sources relative to the phase of a respective spectral component in said spectral distribution from the other of said sources as measured at said point on said surface of said object.